

ATTACHMENT A TO BE EXAMINED

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- 1) (currently amended) A method for preparing a photocatalyst containing titanium dioxide, **characterised** in that from an acid solution containing titanium oxysulphate at a temperature under the boiling point of the solution is precipitated by addition of ~~crystal~~ crystal nuclei a sulphurous titanium dioxide hydrate precipitate, said precipitate being separated and subsequently subjected to thermal treatment in order to obtain a crystalline product with a sulphur content of 1 to 5%.
- 2) (original) A method as defined in claim 1, **characterised** in that the precipitation is conducted without addition of base.
- 3) (currently amended) A method as defined in claim 1 ~~or 2~~, **characterised** in that the precipitation is conducted in a temperature range from 70 to 100°C.
- 4) (original) A method as defined in claim 3, **characterised** in that the crystal nuclei are anatase.
- 5) (currently amended) A method as defined in ~~any one of the preceding claims~~, claim 1, **characterised** in that the precipitate separated from the solution is calcinated in air in the temperature range from 100 to 500°C, preferably 200 to 500°C.

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- 6) (currently amended) A method as defined in ~~any one of the preceding claims,~~ claim 1, **characterised** in that the solution containing titanium oxysulphate is obtained by reacting ilmenite and sulphuric acid, by dissolving the sulphate thus formed and by removing at least part of the iron from the solution by reduction into ferrous form and crystallization.
- 7) (original) A method as defined in claim 6, **characterised** in that ferric iron is left in the solution, so that the titanium dioxide hydrate precipitate obtained contains iron.
- 8) (currently amended) A method as defined in ~~any one of the preceding claims,~~ claim 1, **characterised** in that a chromium (III) compound is added to the precipitate before the thermal treatment.
- 9) (currently amended) A method as defined in ~~any one of the preceding claims,~~ claim 1, **characterised** in that an iron compound is added to the precipitate before the thermal treatment.
- 10) (currently amended) A photocatalyst obtained by a method according to ~~any one of the preceding claims,~~ claim 1, the photocatalyst containing titanium dioxide, **characterised** in that the crystalline particulate product has a specific surface area in the range from

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100 to 250 m<sup>2</sup>/g and that the product contains 1 to 5%, preferably 1 to 4% of sulphur.

- 11) (original) A photocatalyst as defined in claim 10, **characterised** in that the major portion of titanium dioxide is in anatase form.
- 12) (currently amended) A photocatalyst as defined in claim 10 ~~or 11~~, **characterised** in that the product contains 0.05 to 2% of chromium, preferably 0.1 to 1%, and 0.05 to 0.3% of iron, preferably 0.1 to 1.5%.
- 13) (currently amended) Use of a titanium dioxide prepared as in ~~any of claims 1 to 9~~, claim 1, as a photocatalyst operating at visible light wavelengths.
- 14) (currently amended) Use of a titanium dioxide prepared as in ~~any of claims 1 to 9~~, claim 1, as a photocatalyst in the decomposition of organic compounds or microorganisms.
- 15) (currently amended) Use of a titanium dioxide prepared as in ~~any of claims 1 to 9~~, claim 1, as a photocatalyst in a coating composition.